

AMENDMENTS TO THE CLAIMS:

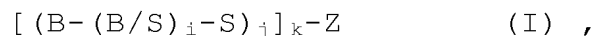
This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1-36. (Cancelled)

37. (New) A composition for producing impact-resistant thermoplastic materials consisting of a block copolymer that comprises as monomers an alkadiene and a vinyl aromatic monomer,

wherein the block copolymer being selected from the group consisting of linear, radial, perfect and partially randomized blocks having the formula (I):



wherein i, j and k are an integer equal to or greater than 1;

Z is a residue of a coupling or a termination agent;

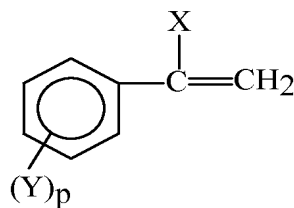
S is the vinyl aromatic monomer; and

B is the alkadiene, which may optionally be totally or partially hydrogenated;

wherein the block copolymer has a B/S ratio from 70/30 to 60/40; and at least one block of the vinyl aromatic monomer in the block copolymer is polydispersed having a polydispersity from 1.01 to 4.

38. (New) The composition for producing impact-resistant thermoplastic materials according to claim 37, wherein the molecular weight of the block copolymer is from 100,000 g/mol to 450,000 g/mol.

39. (New) The composition for producing impact-resistant thermoplastic materials according to claim 37, wherein the vinyl aromatic monomer is an ethylenic unsaturated compound of formula (II)



(II)

wherein X is a hydrogen or a C₁-C₄ alkyl radical;
p is zero or an integer from 1 to 5; and
Y is a halogen or a C₁-C₄ alkyl radical.

40. (New) The composition for producing impact-resistant thermoplastic materials according to claim 39, wherein the vinyl aromatic monomer is selected from the group consisting of vinyl toluene, styrene, methylstyrene, mono-, di-, tri-, tetra- and pentachlorostyrene and the corresponding alpha-methylstyrene, alkylated styrenes in the core and the corresponding alpha-methylstyrenes; ortho- and para-

methylstyrenes, ortho- and para-ethylstyrenes, ortho- and para-methyl-alpha-styrenes, and mixtures or combinations thereof; or with other copolymerizable monomers.

41. (New) The composition for producing impact-resistant thermoplastic materials according to claim 40, wherein the monomers copolymerizable with the vinyl aromatic monomer are selected from the group consisting of acrylic monomers, methacrylic monomers, acrylonitrile and maleic anhydride.

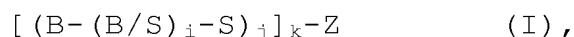
42. (New) The composition for producing impact-resistant thermoplastic materials according to claim 37, wherein the alkadiene has 4 to 8 carbon atoms.

43. (New) The composition for producing impact-resistant thermoplastic materials according to claim 42, wherein the alkadiene is selected from the group consisting of 1,3-butadiene, isoprene, 2,3-dimethyl-1,3-butadiene, piperylene, and mixtures thereof.

44. (New) The composition for producing impact-resistant thermoplastic materials according to claim 43, wherein the alkadiene is 1,3-butadiene.

45. (New) An impact-resistant thermoplastic composition, comprising a vinyl aromatic monomer and an impact-modifier material consisting of a block copolymer that comprises as monomers an alkadiene and a vinyl aromatic compound, wherein said composition comprises:

A) from 3 % to 50 % in weight of a block copolymer formed by an alkadiene and a vinyl aromatic monomer, the block copolymer being selected from the group consisting of linear, radial, perfect and partially randomized block copolymers having the formula (I):



wherein i, j, and k are an integer equal to or greater than 1;

Z is a residue of a coupling or a termination agent;

S is the vinyl aromatic monomer; and

B is the alkadiene, which may optionally be totally or partially hydrogenated;

wherein the block copolymer has a B/S ratio from 70/30 to 60/40; at least one block of the vinyl aromatic monomer in the block copolymer is polydispersed having a polydispersity from 1.01 to 4; and

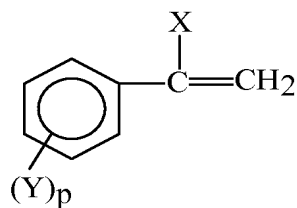
B) from 97 % to 50 % in weight of a vinyl aromatic monomer.

46. (New) The impact-resistant thermoplastic composition according to claim 45, wherein the molecular weight of the at least one block of the vinyl aromatic monomer of the impact modifier material is from 5,000 g/mol to 420,000 g/mol.

47. (New) The impact-resistant thermoplastic composition according to claim 46, wherein the molecular weight of the at least one block of the vinyl aromatic monomer of the impact-resistant material is from 30,000 g/mol to 120,000 g/mol.

48. (New) The impact-resistant thermoplastic composition according to claim 45, wherein the molecular weight of the block copolymer is from 100,000 g/mol to 450,000 g/mol.

49. (New) The impact-resistant thermoplastic composition according to claim 45, wherein the vinyl aromatic monomer is an ethylenic unsaturated compound of formula (II)



(II)

wherein X is a hydrogen or a C₁-C₄ alkyl radical;
p is zero or an integer from 1 to 5; and
Y is a halogen or a C₁-C₄ alkyl radical.

50. (New) The impact-resistant composition according to claim 49, wherein the vinyl aromatic monomer is selected from the group consisting of vinyl toluene, styrene, methylstyrene, mono-, di-, tri-, tetra- and pentachlorostyrene and the corresponding alpha-methylstyrene, alkylated styrenes in the core and the corresponding alpha-methylstyrenes; ortho- and para-methylstyrenes, ortho- and para-ethylstyrenes, ortho-, para-methyl-alpha-styrenes, and mixtures or combinations thereof or with other copolymerizable monomers.

51. (New) The impact-resistant thermoplastic composition according to claim 50, wherein the monomers copolymerizable with the vinyl aromatic monomer are selected from the group consisting of acrylic monomers, methacrylic, acrylonitrile and maleic anhydride.

52. (New) The impact-resistant thermoplastic composition according to claim 37, wherein the alkadiene has 4 to 8 carbon atoms.

53. (New) The impact-resistant thermoplastic composition according to claim 52, wherein the alkadiene is selected from the group consisting of 1,3-butadiene, isoprene, 2,3-dimethyl-1,3-butadiene, piperylene, and mixtures thereof.

54. (New) The impact-resistant thermoplastic composition according to claim 53, wherein the alkadiene is 1,3-butadiene.